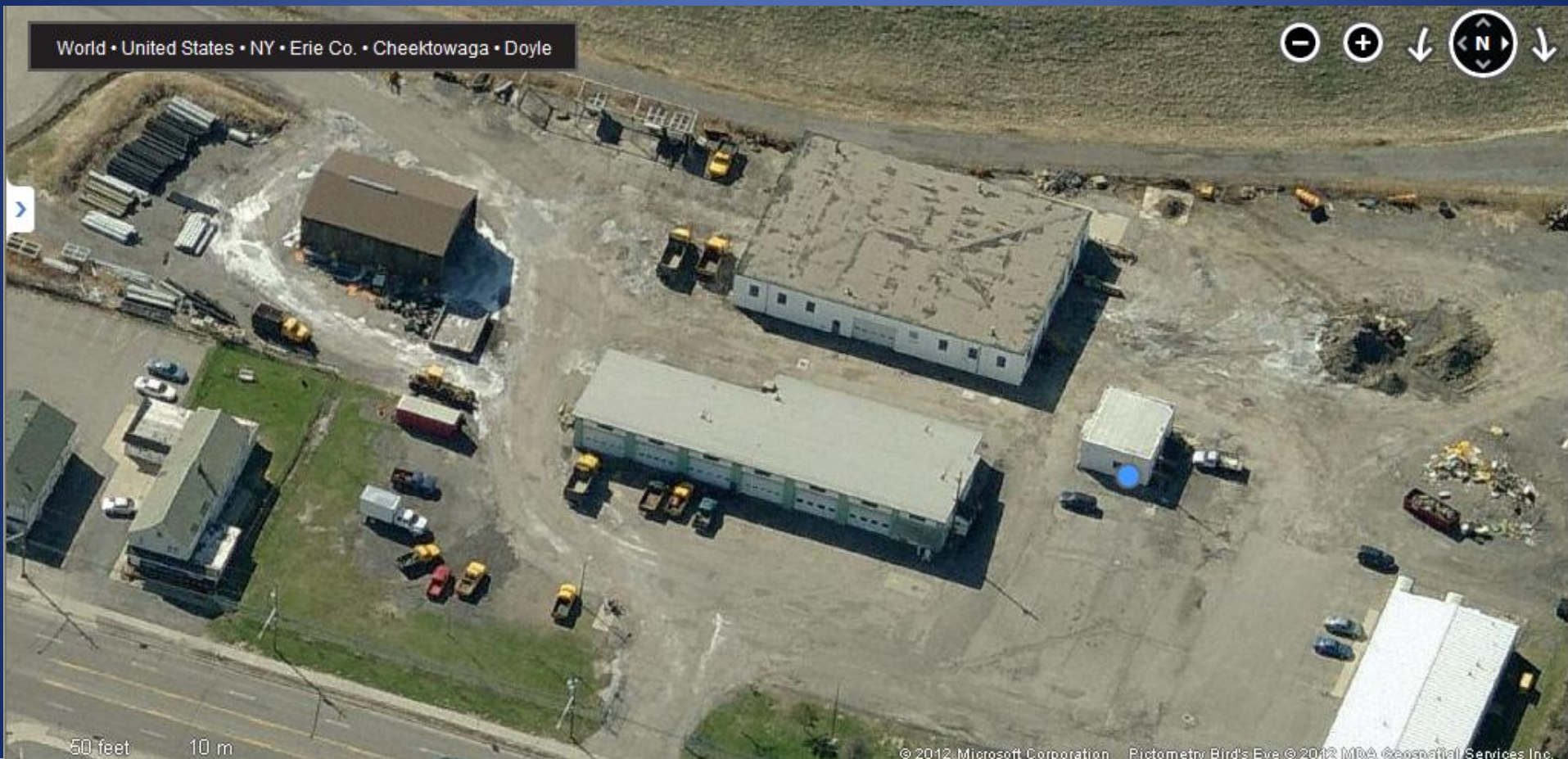


Pollution Prevention & Good Housekeeping for Municipal Operations



Mary Rossi
Erie County DEP



Western NY Stormwater Coalition



WNY Stormwater Coalition

Erie & Niagara Counties
40 Municipalities
University at Buffalo

Phase II Stormwater Rule

Mandated by the US Environmental Protection Agency (EPA)

Required by the 1987 Amendments to Clean Water Act

Implemented in NYS by DEC and regulated municipalities

NYS DEC issued “General Permits” to regulate stormwater discharges from construction sites and municipalities

NY State Pollutant Discharge Elimination System (SPDES) General Stormwater Permits

GP-0-10-002

SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (*MS4s*)

Regulates MS4s located in “urbanized areas”

GP-0-10-001

SPDES General Permit for Stormwater Discharges from Construction Activity

**Regulates Construction Activities that disturb
1 acre or more of land**

Municipal Separate Storm Sewer System (“MS4”)

Stormwater Permit GP-0-10-002

A conveyance or system of conveyances owned by a State, City, Town, Village, or other public entity that discharges to the Waters of the United States and is:

- designed or used to collect or convey stormwater (includes gutters, pipes, ditches)
- not a combined sewer
- not part of a Publicly Owned Treatment Works (i.e. sewage treatment plant)

NYS Regulated MS4s

Minimum population of 50,000 and
Minimum average population density of
1000 persons per square mile
(based on the 2010 Census data)

Phase II Regulated Municipalities

Erie County MS4s

Town of Alden	Village of Depew	Town of Lancaster
Village of Alden	Town of East Aurora	Village of Lancaster
Town of Amherst	Town of Eden	Town of Orchard Park
Village of Angola	Town of Elma	Village of Orchard Park
Town of Aurora	Town of Evans	Village of Sloan
Village of Blasdell	Town of Grand Island	Town of Tonawanda
Town of Boston	Town of Hamburg	City of Tonawanda
City of Buffalo	Village of Hamburg	Town of West Seneca
Town of Cheektowaga	Village of Kenmore	Village of Williamsville
Town of Clarence	City of Lackawanna	

County of Erie

Phase II Regulated Municipalities

Niagara County MS4s

Town of Cambria

Town of Lewiston

Village of Lewiston

Town of Lockport

City of Niagara Falls

Village of Youngstown

City of North Tonawanda

Town of Pendleton

Town of Porter

Town of Niagara

Town of Wheatfield

County of Niagara

MS4 Program Requirements

MS4 operators must implement a Stormwater Management *Program* (SWMP) that:

- Contains six Minimum Control Measures (MCMs)
- Identifies Best Management Practices (BMPs)
- Sets measurable goals for each MCM
- Provides for annual reporting (due June 1)
- Is developed, implemented and enforced to reduce stormwater pollutants to Maximum Extent Practicable (MEP)

Regulated MS4 Stormwater Management Program

Six Minimum Control Measures

- Public education and outreach
- Public participation & involvement
- *Illicit discharge detection and elimination*
- Construction site runoff control
- Post-construction site runoff control
- *Pollution prevention & good housekeeping of municipal operations*

Measurable Goals

Each *Minimum Control Measure* must have at least one goal that is quantifiable.

For example:

- Tons of soil removed from street sweeping
- Reduced number of beach closures
- Illicit discharges removed
- Training sessions for employees
- Adopt laws, ordinances and regulations
- Review of construction permits and site plans
- Reduced impervious surfaces in new development

Measurable Goals document annual progress toward full implementation of the SWMPP

Six Minimum Requirements

1. Public Education and Outreach on Stormwater Impacts

- Identify pollutants of concern (POCs); waterbodies/geographic areas of concern; target audiences
- Develop an ongoing public education & outreach program
- Select education/outreach activities & measurable goals to ensure reduction of POCs to the maximum extent practicable (MEP)

1. Public Education and Outreach on Stormwater Impacts

- Identify pollutants of concern (POCs); waterbodies/geographic areas of concern; target audiences
 - ✓ POCs: silt/sediment; pathogens; floatables; phosphorous
 - ✓ Waterbodies of concern & geographic areas of concern are specific to each MS4
 - ✓ Target audiences: households; developers & contractors; small businesses

1. Public Education and Outreach on Stormwater Impacts

- Develop an ongoing public education & outreach program
 - ✓ Educational brochures & pamphlets
 - ✓ Public education displays
 - ✓ Web page
 - ✓ Billboard campaigns
 - ✓ Web banners
 - ✓ Video
 - ✓ PSAs

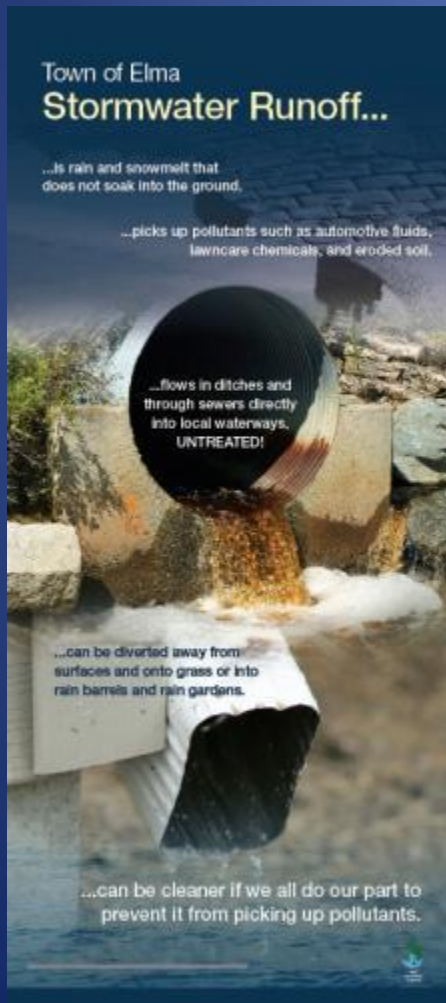
1. Public Education and Outreach on Stormwater Impacts

- Educational brochures & pamphlets



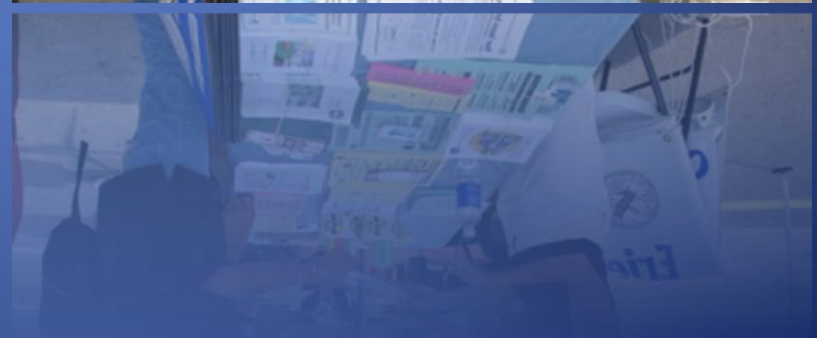
1. Public Education and Outreach on Stormwater Impacts

- Public education displays



1. Public Education and Outreach on Stormwater Impacts

- Public education displays



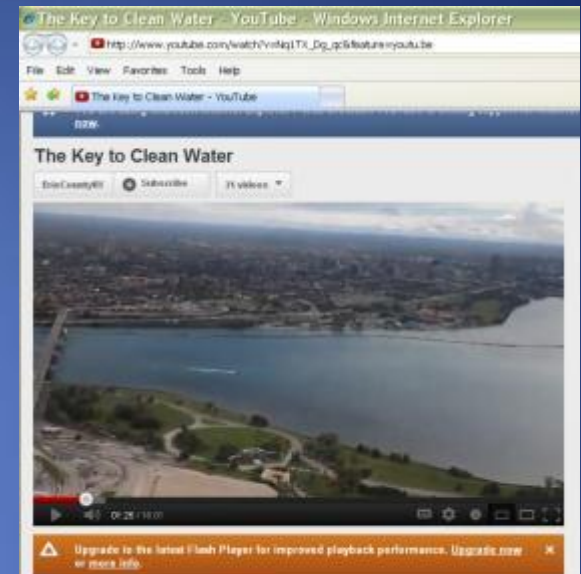
1. Public Education and Outreach on Stormwater Impacts

- **Billboard campaigns**



1. Public Education and Outreach on Stormwater Impacts

- Web page
- Web banners
- Video
- Radio Ads



1. Public Education and Outreach on Stormwater Impacts

- Select education/outreach activities & measurable goals to ensure reduction of POCs to the maximum extent practicable (MEP)
 - ✓ All MS4s have a plaque, brochures & display
 - ✓ Table at regional community events
 - ✓ Participate in school programs
 - ✓ Distribute brochures via public library systems
 - ✓ Videos & PSAs on several web sites; cable access TV

Six Minimum Requirements

1. Public Education and Outreach on Stormwater Impacts



Identify pollutants of concern (POCs);
waterbodies/geographic areas of concern;
target audiences



Develop an ongoing public education &
outreach program



Select education/outreach activities &
measurable goals to ensure reduction of POCs
to the maximum extent practicable (MEP)

Six Minimum Requirements

2. Public Participation/Involvement

- Identify key individuals/groups affected by the program; seek input
- Open Coalition meetings
- Public presentation & comments on Stormwater Management Plan & Annual Report
- Public involvement/participation activities

2. Public Participation/Involvement

- Identify key individuals/groups affected by the program; seek input
 - ✓ Environmental Management Council
 - ✓ Buffalo Niagara Riverkeeper
 - ✓ Erie/Niagara County SWCDs
 - ✓ Conservation/Environmental Commissions

2. Public Participation/Involvement

- Open Coalition meetings
 - ✓ All meetings open to the public
 - ✓ 2x yearly, October & April publicize open meeting

2. Public Participation/Involvement

- Public presentation & comments on Stormwater Management Plan & Annual Report
 - ✓ Town/Village Board Agenda annually
 - ✓ Web pages: (erie.gov for EC)
 - ✓ Open stormwater meetings
 - ✓ Library outreach

2. Public Participation/Involvement

- Public involvement/participation activities
 - ✓ Household hazardous waste collections
 - ✓ Community clean up events
 - ✓ Storm drain identification projects
 - ✓ Adopt-A-Highway



Six Minimum Requirements

3. Illicit Discharge Detection & Elimination

A plan to find the source of pollutants entering storm sewers

- dumping
- sanitary connections
- storing materials outside with no protection

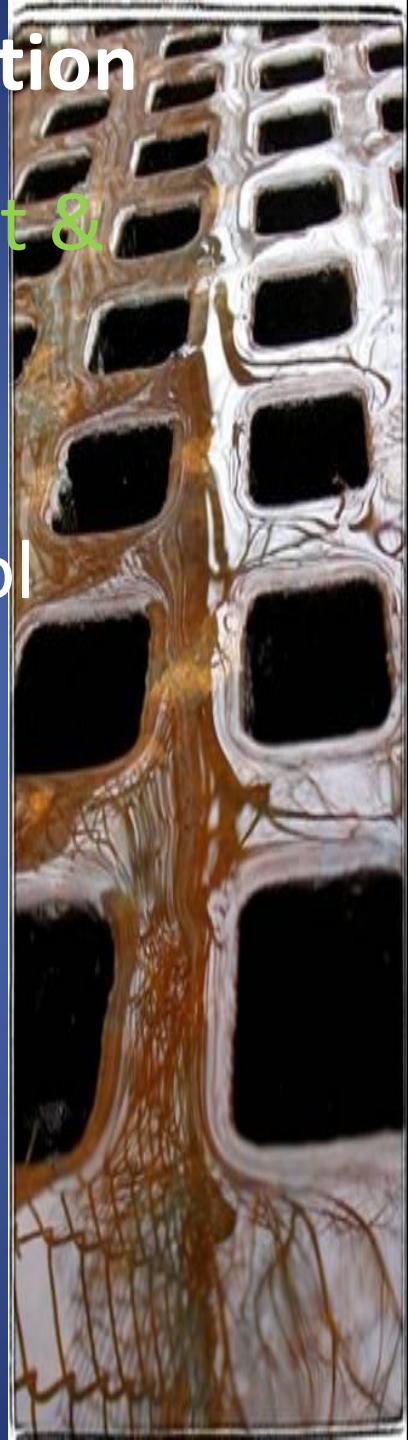


3. Illicit Discharge Detection & Elimination

- Develop & enforce a program to detect & eliminate illicit discharges
- Develop & maintain a map of outfall locations; storm sewersheds; and conveyance system
- Conduct an outfall inspection at least 1x/5 year period (i.e. 20%/year)
- Prohibit, via ordinance, etc. illicit discharges
- Educate employees, businesses, public

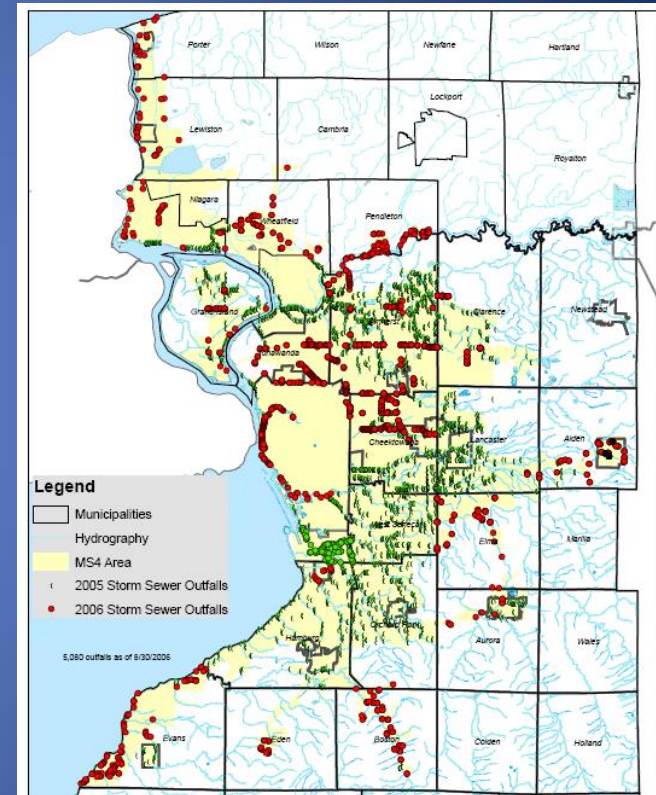
3. Illicit Discharge Detection & Elimination

- Develop & enforce a program to detect & eliminate illicit discharges
 - ✓ Outfall inspection procedures
 - ✓ Outfall sampling & analysis protocol
 - ✓ On-site training:
 - outfall inspections
 - sampling dry weather flow
 - pollutant analysis
 - results interpretation
 - source trackdown procedures



3. Illicit Discharge Detection & Elimination

- Develop & maintain a map of outfall locations; storm sewersheds; and conveyance system
 - ✓ 5,201 outfalls mapped in Erie/Niagara County
 - ✓ June 2012 started a 3 year project to map storm sewersheds & conveyance systems



3. Illicit Discharge Detection & Elimination

- Conduct an outfall inspection at least 1x/5 year period (i.e. 20%/year)
- ✓ Visual inspection of outfalls to verify/update existing data, determine presence of dry weather flow & if so, sample, analyze & trackdown if pollutants are present


3. Illicit Discharge Detection & Elimination

- Prohibit, via ordinance, etc. illicit discharges
- Educate employees, businesses, public
 - ✓ NYS Model Local Law/Ordinance was passed by all MS4s in Erie/Niagara County
 - ✓ IDDE inspection, sampling, analysis & trackdown training program in place
 - ✓ Small business stormwater pollution prevention brochures are developed
 - ✓ Citizen's Guide to Detecting & Reporting Illicit Discharges is available

3. Illicit Discharge Detection & Elimination



Develop & enforce a program to detect & eliminate illicit discharges

- Develop & maintain a map of outfalls; 
storm sewersheds; and conveyance system

- Conduct an outfall inspection at least 1x/5 year period (i.e. 20%/year)



Prohibit, via ordinance, etc. illicit discharges



Educate employees, businesses, public

Six Minimum Requirements

4. Construction Site Runoff Control

- To reduce soil erosion and prevent eroded soil from entering storm sewers and ditches



4. Construction Site Runoff Control

- **Develop, implement & enforce a program that:**
 - ✓ Addresses runoff from construction activities that disturb >1 acre
 - ✓ Includes a law/ordinance
 - ✓ Requires erosion & sediment control on construction projects
 - ✓ Allows for sanctions to ensure compliance
 - ✓ Requires contractors to control site waste
 - ✓ Describes procedures for SWPPP review

- **Develop, implement & enforce a program (cont'd):**

- ✓ Describes procedures for receipt/follow up of complaints
- ✓ Describes site inspection & enforcement
- ✓ Educates contractors, developers, design engineers & MS4 staff on requirements
- ✓ Ensures construction site operators have received NYS-endorsed training
- ✓ Maintains an inventory of active sites
- ✓ Develop, record, assess, modify goals
- ✓ Select BMPs & goals to ensure reduction of POCs to the MEP

4. Construction Site Runoff Control



Silt fences prevent the offsite transport of sediment



Buffers at the perimeters of construction sites are similar to agricultural buffers in that they trap sediments and remove pollutants in runoff from exposed areas (Source: Nova Scotia Department of Agriculture and Fisheries, 2000)



Coarse gravel and cinder blocks are often used to keep sediment and other pollutants out of storm drains

4. Construction Site Runoff Control



Check dams are used to reduce the energy of storm water to prevent erosion



In sequenced construction, sites are completed in stages and completed portions are permanently stabilized before other areas are disturbed

Six Minimum Requirements

5. Post-Construction Runoff Control

- To minimize stormwater pollution from completed construction projects
- Develop inspection and maintenance program

5. Post-Construction Runoff Control

- ✓ Addresses runoff from new development & re-development that disturbs >1 acre
- ✓ Includes a law/ordinance
- ✓ Includes a combination of structural management practices to reduce pollutants to the MEP
- ✓ Describes procedures for SWPPP review

5. Post-Construction Runoff Control

- ✓ Maintains an inventory of post-construction practices
- ✓ Ensures long-term O&M of practices
- ✓ Ensure adequate resources for inspection of sites/practices & enforcement
- ✓ Develop, record, assess, modify goals
- ✓ Select BMPs & goals to ensure reduction of POCs to the MEP

5. Post-Construction Runoff Control

Wet Ponds

Ponds with a permanent pool to store stormwater.



Stream Buffer System

Protective areas surrounding stream banks.

5. Post-Construction Runoff Control

Constructed Wetlands

Habitat created to naturally filter water.



Grassed swales can be used along roadsides and parking lots to collect and treat storm water runoff

5. Post-Construction Runoff Control

Green Infrastructure Practices

Runoff Reduction

Figure 6. 2 Aerial photograph of development project illustrating preservation of undisturbed natural areas
(Source: Arendt, 1988)



Conservation Planning

Figure 6. 31 Expanses of parking area
"Broken-Up" with Landscape Features



Parking Lot Islands

Green Infrastructure Practices

Runoff Reduction

Stormwater Container Planters



Cisterns

Figure 6. 68 Cisterns can be designed for smaller residential uses (left) or for larger commercial and industrial business operations (right).



Rain Gardens

Figure 6. 44 Rain gardens also have aesthetic value



Vegetated Filters

Figure 6. 35 Use of a vegetated filter



Green Infrastructure Practices

Runoff Reduction

Container Planters

Figure 6. 64 Contained stormwater planters made of concrete



Figure 6. 65 Thin flow-through planter collects runoff from the rooftop of a parking garage and is incorporated into the structure



Permeable Pavers

Figure 6. 68 Asphalt, Permeable Pavers, Porous Concrete, Albany, NY



Figure 6. 80 Walkway with permeable pavers - Scenic Hudson Park, Cold Spring, NY



Green Roofs

Figure 6. 47 Green roof on a Manhattan apartment building along the Hudson River



Figure 6. 48 Green roof: High Line Park, NYC



Six Minimum Requirements

6. Pollution Prevention/Good Housekeeping for Municipal Operations

- Develop & implement a P2/GH program that:
 - ✓ Addresses operations & facilities that may contribute POCs to the MS4
 - ✓ Perform & document a self-assessment
 - ✓ Determines BMPs, policies, procedures to reduce/prevent pollutant discharge

- **Develop & implement a P2/GH program that:
(cont'd)**

- ✓ Prioritizes P2/GH based on geographic area, potential to improve water quality, facilities/operations most in need
- ✓ Addresses P2/GH priorities
- ✓ Includes employee training
- ✓ Requires third party contractors to meet relevant permit requirements
- ✓ Requires coordination with municipal operations/facilities subject to MSGP for industrial stormwater discharges

- **Develop & implement a P2/GH program that:
(cont'd)**
 - ✓ Evaluate & incorporate runoff reduction & green infrastructure in routine upgrades to conveyance system & properties
 - ✓ Develop, record, assess, modify goals
 - ✓ Select BMPs & goals to ensure reduction of POCs to the MEP
 - ✓ Adopt techniques to reduce use of fertilizers, pesticides & herbicides and their potential to impact surface water

What does MCM #6: Pollution Prevention/ Good Housekeeping really mean?

- Develop a program to reduce and prevent discharge of pollutants from municipal operations and facilities
- Implement Best Management Practices (BMPs)
- Develop measurable goals
- Train Municipal Staff
- Annual Report to DEC

Typical Municipal Facilities/Operations

- Highway Department
 - Parks
 - Fueling Operations
 - Sewer Department
 - Fleet Maintenance
 - Solid Waste Collection
 - Fire / Police
 - Municipal Building
 - Library Building

Additional Areas of Concern

- Salt and Sand Storage
- Floor Drains
- Vehicle Washing
- Vehicle Maintenance
- Other DEC Permits (Art. 15 & 24, PBS)
- Construction activities that may be >1 acre

Construction Permit Exemptions

- Road ditch cleaning & shaping to improve water quantity
- Stone road shoulder replacement
- Resurfacing of roadways and gravel road maintenance
- Road paving and routine maintenance without disturbing stone sub-base (bottom 6" of sub-base must remain undisturbed)
- Sediment removal to restore sheet flow drainage at the edge of highway
- Agricultural Field Activities
- Some Silvicultural Activities

Even if a project doesn't need any permits, it can still cause a water quality violation!

All operators or staff should:

- Take all reasonable steps to prevent unpermitted discharges
- Practice erosion and sediment control and “good housekeeping”

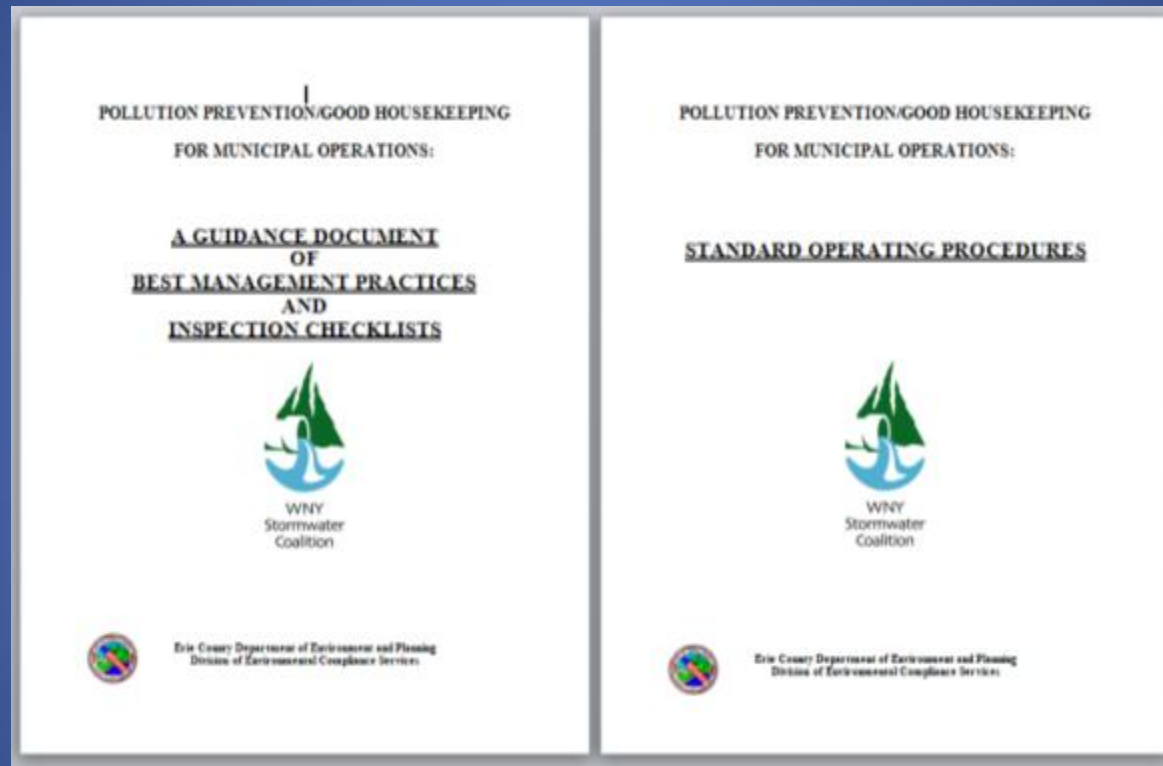


Turbidity Violation:

A “substantial visible contrast to natural conditions”

Subject to Penalties up to \$37,500 per violation per day

POLLUTION PREVENTION



Good Housekeeping Practices for
Municipal Operations

Landscaping And Lawn Care



Purpose:

Prevent contamination of stormwater by minimizing contact with fertilizer & by using innovative landscaping techniques

Landscaping And Lawn Care



Potential pollutants:

Nutrients (nitrogen, phosphorous)

Landscaping And Lawn Care: Best Management Practices

- Plant vegetation that needs minimal amounts of care (i.e. water, fertilizer)
- Implement landscaping techniques that minimize water usage
- Water just enough to supplement rainfall – use drip irrigation techniques



Landscaping And Lawn Care: Best Management Practices

- Minimize fertilizer application, use slow release fertilizers
- Mow with blades set high, leave grass clippings on lawn
- Use compost or natural (organic) fertilizers

Spill Response & Prevention



Purpose:

To prevent contamination of stormwater by using proper storage techniques & preventive measures

Spill Response and Prevention



Potential pollutants:

Vehicle and equipment maintenance products (fuel, antifreeze, oils); rock salt; chemicals (fertilizers, pesticides)

Spill Response & Prevention: Best Management Practices

- Monitor equipment storage areas, materials storage areas, and waste storage areas, checking for: fluid leaks, uncovered containers, and deteriorating labels and/or containers
- Inspect secondary containment systems (i.e. oil, fuel storage tanks)
- Monitor oil/water separators and their downstream discharges. An oily discharge indicates that the unit is either not functioning properly or needs to be “pumped out”.

Spill Response & Prevention: Best Management Practices

- Install oil absorbent materials in floor drains and/or catch basins, and inspect, remove/replace as appropriate.
- Monitor floor drains and storm receiver inlets and outlets for excessive amounts of contaminants, and clean out as necessary.
- Remove spilled salt from salt loading area, and use or store

Pest Control



Purpose: Prevent contamination of stormwater by pesticides which can be toxic to aquatic life & may contaminate water

Pest Control:

Best Management Practices

- Purchase only enough pesticides for 1 year; store properly
- Adopt Integrated Pesticide Management techniques
- Adopt alternatives to pesticides options (physical, mechanical, biological)
- Eliminate food, water, shelter for pests by implementing routine inspections

Pest Control:

Best Management Practices

- Inspect pest traps regularly, remove and properly dispose of dead pests
- Minimize pesticide application, use non toxic/lowest toxicity pesticides - (glue boards)
- Do not apply pesticides immediately before/during rain events

Pet Waste Collection



Purpose:

Prevent contamination of stormwater via contact with pet-related wastes

Pet Waste Collection



Potential pollutants: Bacteria

Pet Waste Collection: Best Management Practices

Animal Control Facilities:

- Check for pet waste each day; once at the beginning of the work day, once at the end of the work day.
- Remove all pet waste; dispose of properly.
- Wash housing areas with a disinfectant soap and hot water, and rinse to a sanitary sewer (if available) or to a vegetated area.

Pet Waste Collection: Best Management Practices

Community:

- Provide pet waste bag stations; trash receptacles
- Post pet waste signage (municipal regulations)
- Educate public on hazards (brochures, signage)
- Remove all pet waste; dispose of properly.



Septic System Management



Purpose:

Prevent contamination of stormwater that may contact septic system effluents

Septic System Management: Best Management Practices

- Inspect the system, looking for evidence of problems, such as sewage odors, backup of wastewater in sewer lines or the distribution box, “ponding” of wastewater on the ground’s surface at the system’s components
- Pump out the septic tank as needed
- Maintain records of inspections, pump outs

Vehicle and Equipment Maintenance



Purpose:

To prevent contamination of stormwater by using proper maintenance techniques, proper maintenance locations and retrofitting infrastructure



Potential pollutants:

Metals and hydrocarbons, petroleum products, anti-freeze, cleaning solvents

Vehicle and Equipment Maintenance: Best Management Practices

- Conduct maintenance work indoors
- Dedicate specific vehicle bays, seal floor drain systems
- If work is performed outside, protect stormwater drainage conveyances from spills
- Clean up spilled materials immediately, using dry methods (absorbents)

Vehicle and Equipment Maintenance: Best Management Practices

- Install oil/water separator
- Rinse grass from lawn care equipment over permeable, vegetated areas



Vehicle and Equipment Washing



Purpose:

To prevent contamination of stormwater by using proper washing techniques, locations and proper disposal of wash water



Potential pollutants:

Nutrients (soaps), road salt residue,
hydrocarbons (petroleum products), metals

Vehicle and Equipment Washing: Best Management Practices

- Designate a specific vehicle washing bay/facility
- Equip hoses with automatic shutoff devices and spray nozzles

Vehicle and Equipment Washing: Best Management Practices

- **Wash vehicles indoors**
 - ✓ Clean with pressurized cold water without soap (storm system)
 - ✓ Use biodegradeable soaps - (sanitary system)
 - ✓ Steam clean without soap (oil/water separator)
 - ✓ If draining to oil/water separator, DO NOT USE DETERGENTS, as they emulsify oils thereby making the unit ineffective

Roadway and Bridge Maintenance



Purpose:

To prevent contamination of stormwater as it flows over debris that is deposited on road infrastructure and bridges



Potential Pollutants:

Road salt residue; hydrocarbons; particulates – dry paint or abrasive compounds; debris

Roadway and Bridge Maintenance: Best Management Practices

Roadway Maintenance

- Pave only in dry weather
- Cover manholes and catch basins prior to paving, patching, etc.
- Clean all fluid leaks/spills from paving immediately
- Maintain roadside vegetation
- Herbicide/pesticide use restricted to vegetation
- Sweep/vacuum roadways and shoulders to remove debris, particulate matter

Roadway and Bridge Maintenance: Best Management Practices

Bridge Maintenance

- Direct runoff from bridge scuppers/catch basins to vegetated areas
- Remove debris from bridge scuppers/catch basins routinely
- Sweep bridge deck and structure prior to washing
- Control particulate matter from bridge sandblasting operations
- Cover storm drains/inlets when sandblasting/painting

Alternative Discharge Options for Chlorinated Water



Purpose:

To prevent contamination of stormwater that may come into contact with pool water or with treated waters from municipal systems



Potential Pollutants:

Chlorinated water can injure or kill aquatic life –
total residual chlorine as low as 10 micrograms/liter
detrimentally affects survival and reproduction of
aquatic life

Alternative Discharge Options for Chlorinated Water: Best Management Practices

- Prior to discharge, allow disinfectant in the pool to dissipate, or dechlorinate.
- If a sanitary sewer is available for discharge, contact the sewer authority/wastewater treatment plant personnel and obtain their guidelines for this activity.
- If no sanitary sewer is available, discharge the water at a slow rate (i.e. using a siphon hose) to a vegetated area so that it can be filtered & absorbed
- Discharge during dry weather conditions only.

Hazardous and Waste Materials Management



Purpose:

To prevent contamination of stormwater by properly storing, handling, & disposing of hazardous and waste materials



Potential Pollutants:

Lube oils; coatings (paints, thinners); anti-freeze; cleaning agents; fuels

Hazardous & Waste Materials Management: Best Management Practices

- Store all materials/wastes in closed, labeled containers – if outside storage is necessary, the storage area should be sheltered from the weather
- Designate storage areas away from floor drains (if inside) and storm receivers (if outside)
- Eliminate floor drains if possible

Hazardous & Waste Materials Management: Best Management Practices

- Reduce stocks of materials where viable - use “first in/first out” management techniques
- Use least toxic materials
- Install secondary containment devices where appropriate
- Recycle/dispose of materials properly
- Do not mix dissimilar wastes in the same containers

Operational By Products and Wastes



Purpose:

To prevent contamination of stormwater by preventing “illegal” disposal, and by properly storing, handling, and disposing of facility generated and wastes



Potential pollutants:

Leaching, runoff from toxic and biological contaminants

Operational By Products and Wastes: Best Management Practices

FACILITY GENERATED WASTES

- Develop a list of wastes, with procedures for handling/storage/recycling/disposal, and provide to staff.
- Identify recycling opportunities (i.e. paper, cardboard, metals)
- ID and use land disposal opportunities (i.e. deer carcasses)

Operational By Products and Wastes: Best Management Practices

MUNICIPAL AREAS SUSCEPTIBLE TO ILLEGAL DUMPING

- Post/maintain “NO DUMPING” signs, erect barriers to prevent access, illuminate area
- Maintain areas/remove illegally dumped trash/debris
- Household hazardous waste collected
- Litter control program

Catch Basin and Storm Drain System Cleaning



Purpose:

To prevent contamination of stormwater with debris which has been deposited in storm drain systems by performing periodic maintenance



Potential Pollutants:
Grit; debris; sediment; organic matter

Catch Basin & Storm Drain System Cleaning: Best Management Practices

Catch Basins

- Inspect catch basins to prioritize for maintenance, repair of structure (also pertains to manholes, piping) and cleaning
- Clean catch basins when debris has filled it 1/3 of the way to the outlet
- Dispose/store vector waste properly

Catch Basin & Storm Drain System Cleaning: Best Management Practices

Ditches

- Clean, remove obstacles/debris
- Cut/remove vegetation (as opposed to ditch scraping) to allow capture of sediment
- During ditch scraping, maintain vegetation (downstream in ditch) to capture sediment

Street Cleaning and Maintenance



Purpose:

To prevent contamination of stormwater as it comes into contact with debris that has been deposited on roadways



Potential Pollutants:

Trash, grit, and debris; sediment and toxic/biological pollutants; road repair materials

Street Cleaning and Maintenance: Best Management Practices

- Sweep in a pattern to avoid storm inlets and catch basins
- Prioritize street cleaning, perform routine maintenance
- Dispose/store sweeper waste properly
- Maintain roadside vegetation, re-seed as necessary

Road Salt Storage and Application



Purpose:

To prevent contamination of stormwater by using proper storage techniques, and improving application techniques of deicing materials



Potential Pollutants: Salt

Road Salt Storage and Application: Best Management Practices

- Store road salt in covered storage facility
- Diversion berms to minimize run-on to storage area
- Clean up “track out” after storm events
- Calibrate/maintain salt application equipment

Road Salt Storage and Application: Best Management Practices

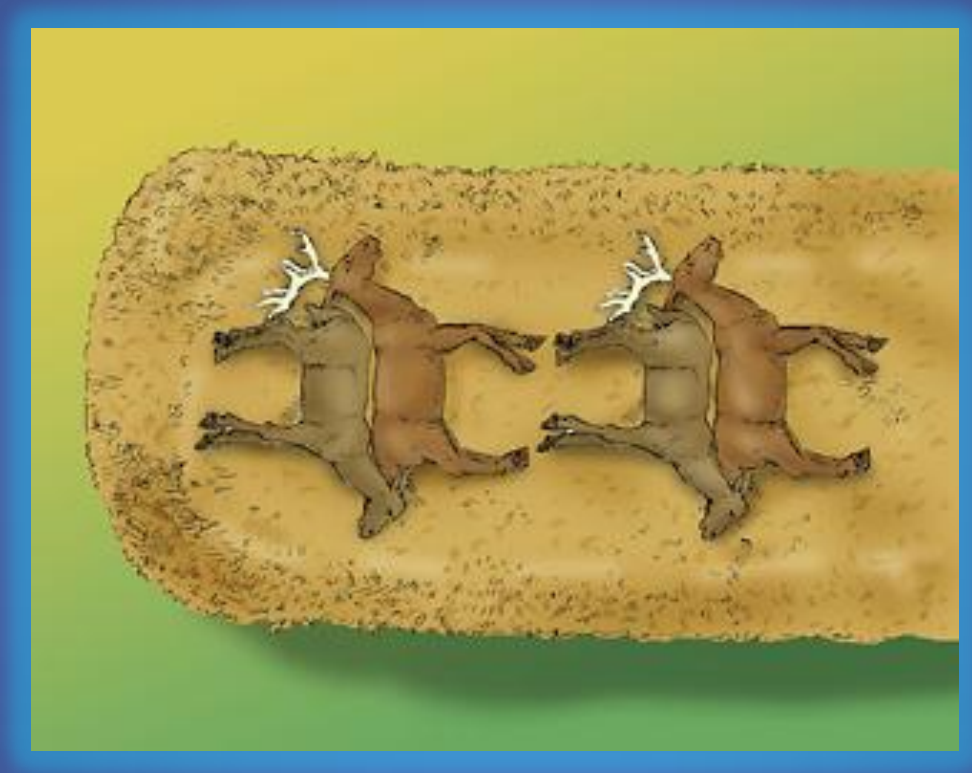
- Minimize salt spillage by not exceeding capacities of equipment (i.e. front end loader, truck bed) during loading operations
- Consider alternative treatments (plow only, erect snow fence) or products (i.e. sand, calcium chloride, magnesium chloride)

Road Kill Composting Operations



Purpose:

To prevent contamination of stormwater that may come into contact with compost piles



Potential Pollutants: Biological contaminants

Road Kill Composting Operations: Best Management Practices

- Establish compost pile/windrow on well drained, impervious surface with minimal slope
- ID proper types of materials to be composted
- Locate compost piles 200' from receiving waters or wetlands

Marina Operations



Purpose:

To prevent contamination of stormwater via contact with debris, wastes, fuels, or other materials that are used at marinas



Potential Pollutants:
Toxics; sediments; bacteria

Marina Operations: Best Management Practices

- Spill clean up materials at fueling stations
- Site maintenance areas away from water and storm drains
- Sanitary waste pump out station
- Inspect/maintain trash cans, pump out stations, fish cleaning stations
- Install vegetated buffer strips to minimize impervious areas

Construction and Land Disturbance



Purpose:

To prevent contamination of stormwater runoff by preventing contact with barren soils and/or capturing silt and sediment prior to leaving the site



Potential Pollutants:
Sediment; thermal increase

Construction and Land Disturbance: Best Management Practices

- File NOI for Construction Permit if total disturbance is >1 acre
- Install erosion control practices before disturbing soil
- Maintain native vegetation, if possible
- Minimize soil compaction and impervious cover
- Limit grading to small areas
- Divert stormwater away from barren slopes

Key Compliance Requirements

Employee Training

- Stormwater pollution prevention practices
- Illicit Discharge Detection & Elimination
- MS4 stormwater regulations

Key Compliance Requirements

Documentation and recordkeeping

- Inventory of Facilities, Operations & BMPs
- Environmental Self-Assessment (once/3 years)

Municipal Facilities Inventory of Activities & BMPs Implemented											
For Each Municipally-Owned Facility, Print an "X" in the Box if the Activity Occurs											
Information on the Best Management Practices (BMPs) listed below is in the Western NY Stormwater Coalition's Pollution Prevention/Good Housekeeping for Municipal Operations: Best Management Practices & Inspection Checklist and is detailed in the Standard Operating Procedures for each BMP.	Public Works	Public Works	Public Works	Public Works	Public Works	Public Works	Public Works	Public Works	Public Works	Public Works	Public Works
	Public Works	Public Works	Public Works	Public Works	Public Works	Public Works	Public Works	Public Works	Public Works	Public Works	Public Works
Landscaping & Landscaping											
Fertilizer Application											
Pesticide Application											
Fertilizer/Pesticide Storage											
Outside Contractor Used											
Current Best Management Practices (BMPs) in Place											
Leak Purchase/Storage to One Year Supply											
State Release Permits											
State/Local Input/Output											
Alternative Landscaping Techniques: Nativeplanting/Revegetation											
Use Compost/Natural Fertilizers											
Grass Clippings Left on Lawn											
Grass and Plant Management											
Revegetation/Fertilizer & Pesticide Use (See Appendix A, Appendix B)											
Staff Training on Stormwater Pollution Prevention											
Third Party Certification Signed by Outside Contractor											
Spill Response & Prevention											
Aboveground Storage Tanks (oil, fuel, antifreeze, etc.)											
Drums for Liquid Storage											
Chemicals Storage (herbicides, pesticides, herbicides, etc.)											
Current Best Management Practices (BMPs) in Place											
Secondary Containment Systems											
Oil/Water Separator											
Spill Prevention & Response Plan											
Staff Training on Stormwater Pollution Prevention											

Municipal Facility Environmental Self Assessment

For each question check the appropriate box to determine if your facility is incorporating stormwater pollution prevention in daily operations. The completed checklist can be used to identify opportunities for improvement as well as to document stormwater pollution prevention practices in use.

Municipality:

Facility Name:

Facility Address:

Facility Operation	Yes	No	N/A	Can't Determine
Are vehicles washed outdoors or under a roof?				
Are vehicle operations such as washing, maintenance, fluid draining, fluid storage, and waste storage performed under a roof or inside?				
Are vehicles washed regularly to remove contamination & prevent it from polluting stormwater?				
Is wastewater treated by an off-site sewerage?				
Does a trench drain collect contaminated runoff generated inside work areas?				
Is the trench drain system routed to an off-site sewerage?				
Are spills cleaned up of the off-site sewerage regularly?				
Are drains in the facility connected to a sanitary sewer?				
When working outdoors, are storm drain inlets protected from contaminated process water and sediment?				

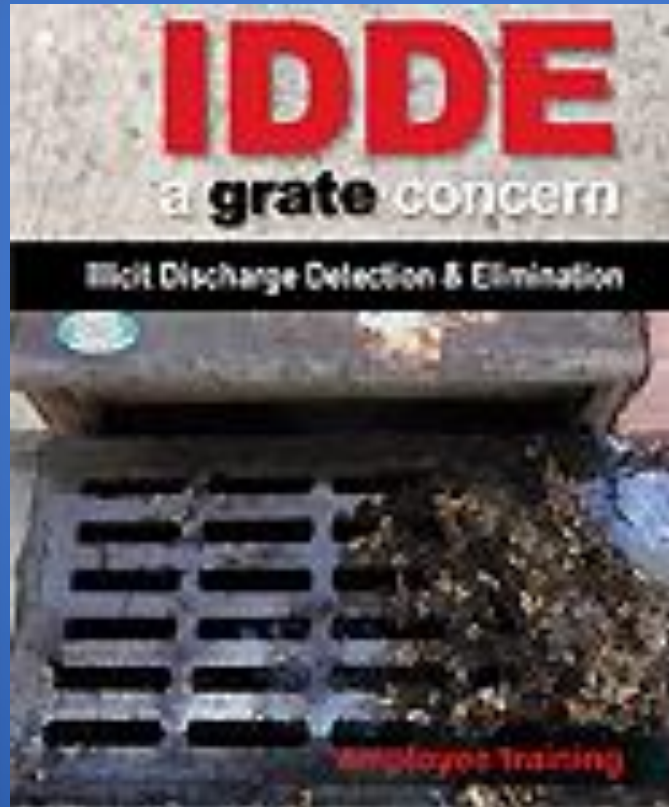
Fluid Management	Yes	No	N/A	Can't Determine
Are fluids in tanks or drums stored with secondary containment?				
Are fluids drained into a drip pan or spill?				
Are funnels or pumps used when transferring fluids?				
Are fluids stored in a spill containment system?				
Are containers maintained in good condition, closed, covered and away from equipment that can cause them to tip over?				
Are containers stored inside or under a roof?				
Are containers inspected regularly?				
Are all containers labeled in a manner that describes the contents adequately?				
Are discarded parts used as drums kept in spill containment?				
Is a closed loop parts washer system used (contains solvent)?				
Is the parts washer lid closed when not in use?				
Is a container in place with a parts washer to contain the solvent to change out spent solvent?				
Has the possibility of using an aqueous based parts washer been explored?				
Are fluids stored in appropriate containers and/or storage cabinets?				
Are storage areas kept clean and well organized?				
Are storage areas labeled clearly?				

Spill and Spill Prevention and Control	Yes	No	N/A	Can't Determine
Are vehicles inspected daily for leaks?				
Is spill control equipment and procedures readily available?				
Are emergency phone numbers posted?				
Are material safety data sheets (MSDS) readily available?				
Are spills cleaned up immediately?				
Are employees trained annually on spill prevention?				

Illicit Discharge Detection & Elimination



Last but not least.....more education!



Questions?

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